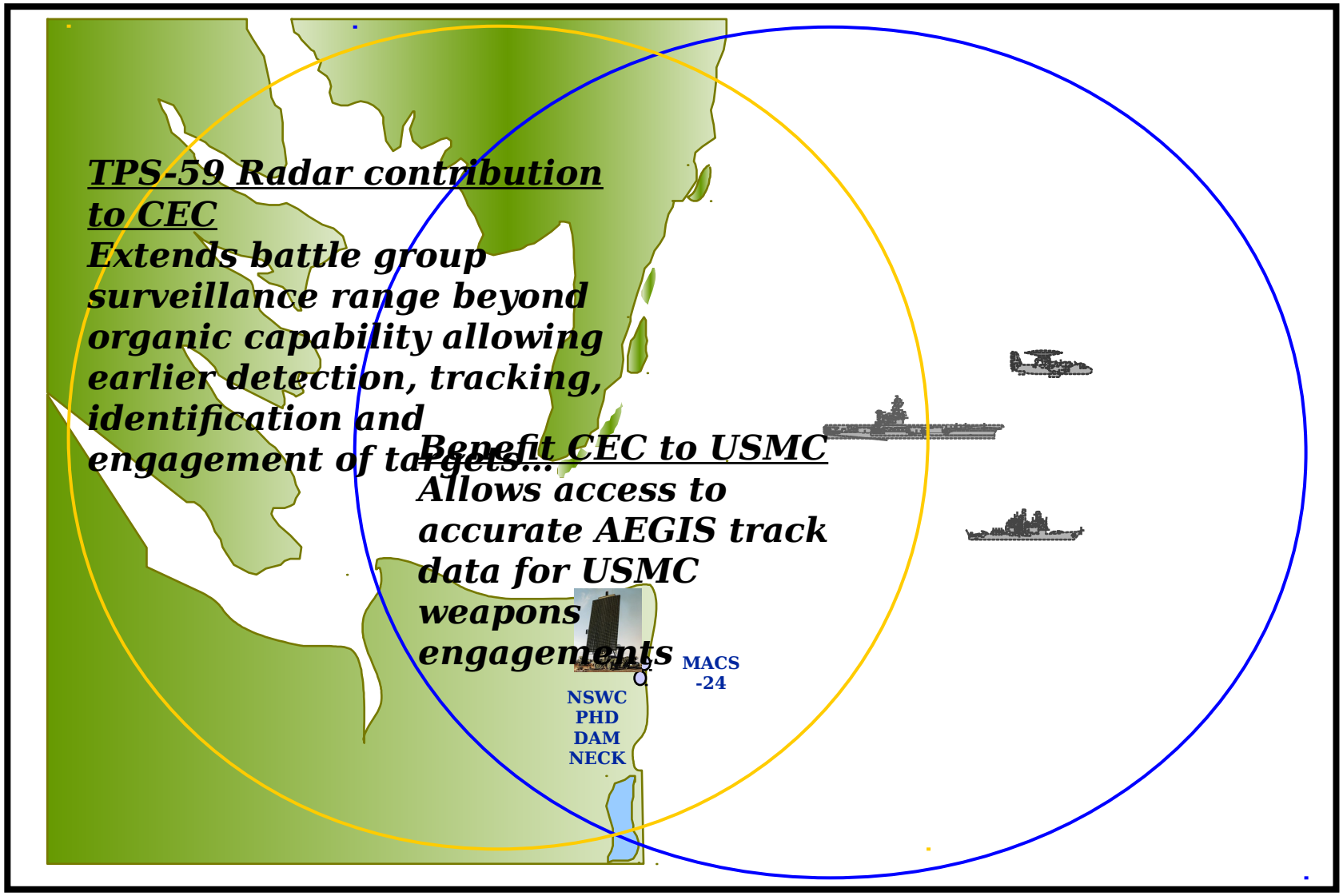
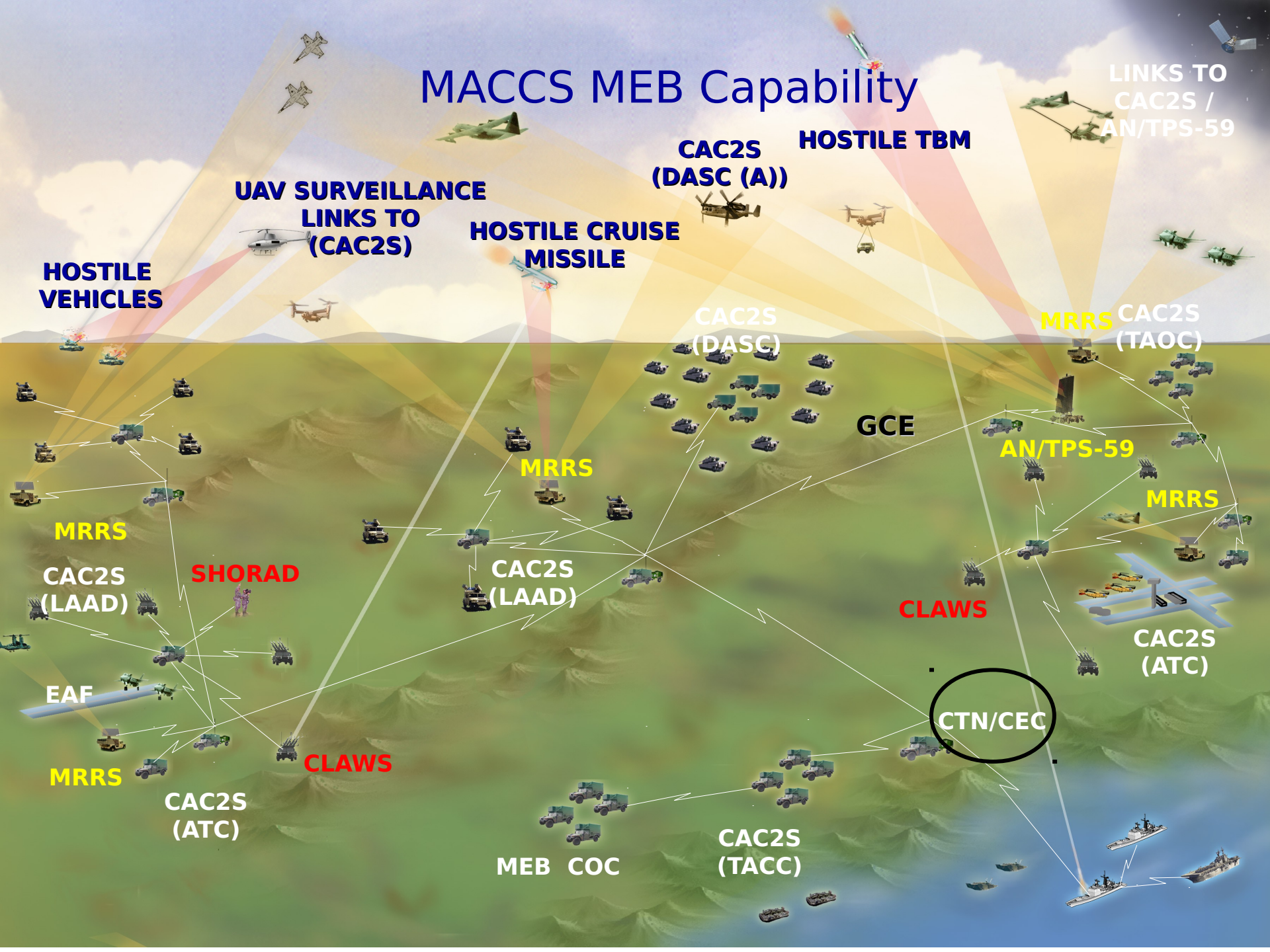
Composite Tracking Network

Program Status Brief
August 2002

Program Office: Program Manager Theater Air Operations Centers
Program Manager: Colonel R. P. Ortiz
Project Officers: Major Don Gordon, Captain Terence Parker

CTN Sensor Networking Mission


TPS-59 Radar contribution to CEC
Extends battle group surveillance range beyond organic capability allowing earlier detection, tracking, identification and engagement of targets…
Benefit CEC to USMC
Allows access to accurate AEGIS track data for USMC weapons engagements
MACS -24
NSWC PHD DAM NECK


MACCS MEB Capability
LINKS TO CAC2S / AN/TPS-59
HOSTILE TBM
CAC2S (DASC (A))
UAV SURVEILLANCE LINKS TO (CAC2S)
HOSTILE CRUISE MISSILE
HOSTILE VEHICLES
CAC2S (DASC)
MRRS
CAC2S (TAOC)
GCE
AN/TPS-59
MRRS
MRRS
MRRS
CAC2S (LAAD)
SHORAD
CAC2S (LAAD)
CLAWS
CAC2S (ATC)
EAF
CTN/CEC
MRRS
CLAWS
CAC2S (ATC)
MEB COC
CAC2S (TACC)

CTN Programmatic Background

- ORD: Cooperative Engagement Capability (CEC) to CTN program
  - ORD Change 1 (27 Jun 01): Recognition of unique USMC requirements
  - Sensor networking capability still based on USN developed CEC technology
  - USN retains lead for developing sensor networking functions
- ACAT III Program
  - MS A Component Advanced Development Decision Nov 01 (ADM)
    - Reassigned as an ACAT III program
- AOA/RAA
  - Not Required (PAE 99635.DOC 14 Oct 99)
    - Based on USN studies of sensor networking alternatives
- USN CEC Program lead, ACAT ID
  - Passed OPEVAL (Jun 01) for Ship systems (USG-2 & B/L 2.0)
  - Building LRIP Ship (USG-2) and Aircraft systems (USG-3)
  - Granted Milestone III Decision (Apr 02)
  - Raytheon current Design Agent (Prime)
  - Full-Rate Production (USG-2)

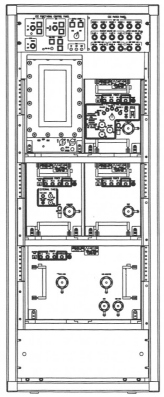
CTN System Description

Comprised of:

- Sensor Networking Components
  - USN CEC technology in a ground mobile package
  - Integrated to USMC sensors, C2 and weapons
- Mobility Packaging Components
  - Complete system that provides expeditionary employment
  - Antenna mast, trailer system
  - Room for growth to accommodate C2 functions
- Logistics Components
  - Equipment required to support operational use
  - Generators, ECU's, organic fuel supply

USN "Hitchhiker" CEC test vehicle - A prototype for the CTN system

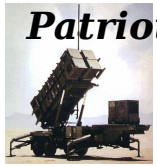
USG/CEC

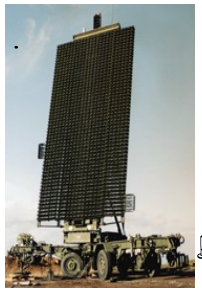


Requirements formed on CEC technology encompassed within the CTN system

CTN Concept Of Employment

CTN system interfaces with Joint CEC participants receiving radar data…





Distributes TPS-59 data to the network…

CAC2S distributes data to shooters for engagements

Interfaces to MACCS radars and CAC2S providing common, accurate track picture

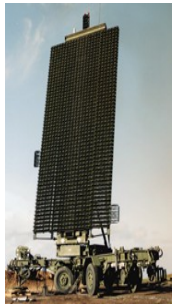
Acquisition Strategy

- Maximize leverage of USN CEC program lead
  - Common software
  - Common hardware technology where feasible
  - Development and testing schedule mating
- Develop interfaces between the USN CEC system and required/related USMC air defense systems
- Develop affordable CTN system that provides land mobility and system operational support
- Utilize USN contracts for the procurement of common CEC components
- Intent to utilize government lab (NSWC Crane) as systems integrator

Development Phases

Divided R&D effort into three distinct increments

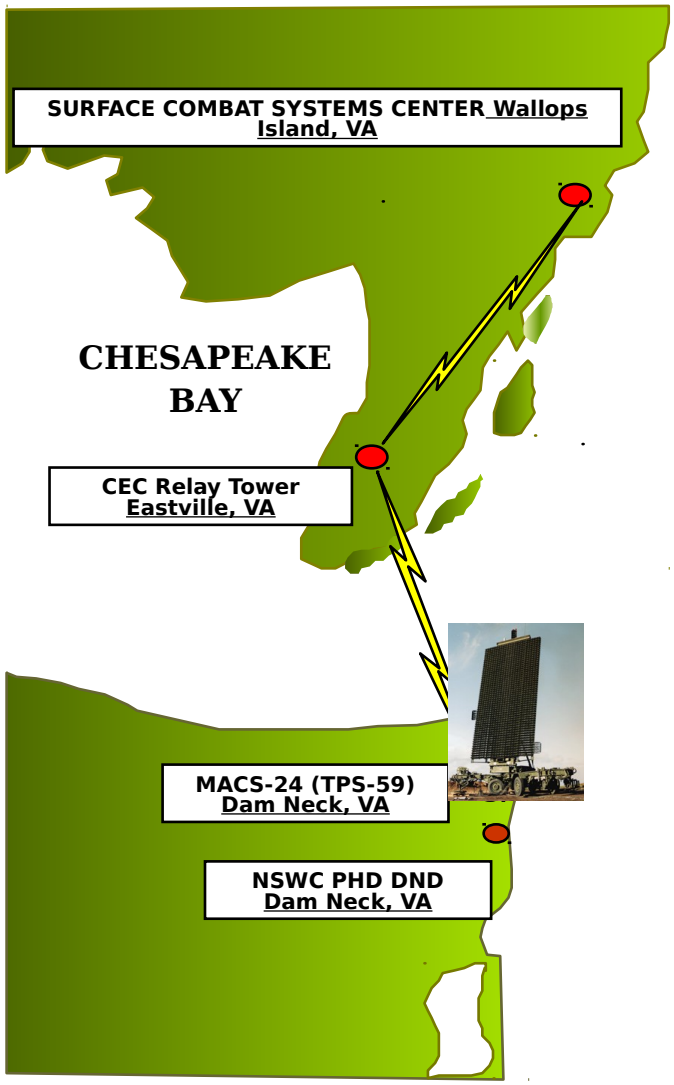
- Increment 1 – Integration with AN/TPS-59(V)3 radar and developing the CTN land-mobile unit



- Increment 2 – Integration with CAC2S

- Increment 3 – Integration with MRRS and ASPARCS (planned as a post-production effort)

CEC Testing Environment


SURFACE COMBAT SYSTEMS CENTER Wallops Island, VA
CHESAPEAKE BAY
CEC Relay Tower Eastville, VA
MACS-24 (TPS-59) Dam Neck, VA
NSWC PHD DND Dam Neck, VA

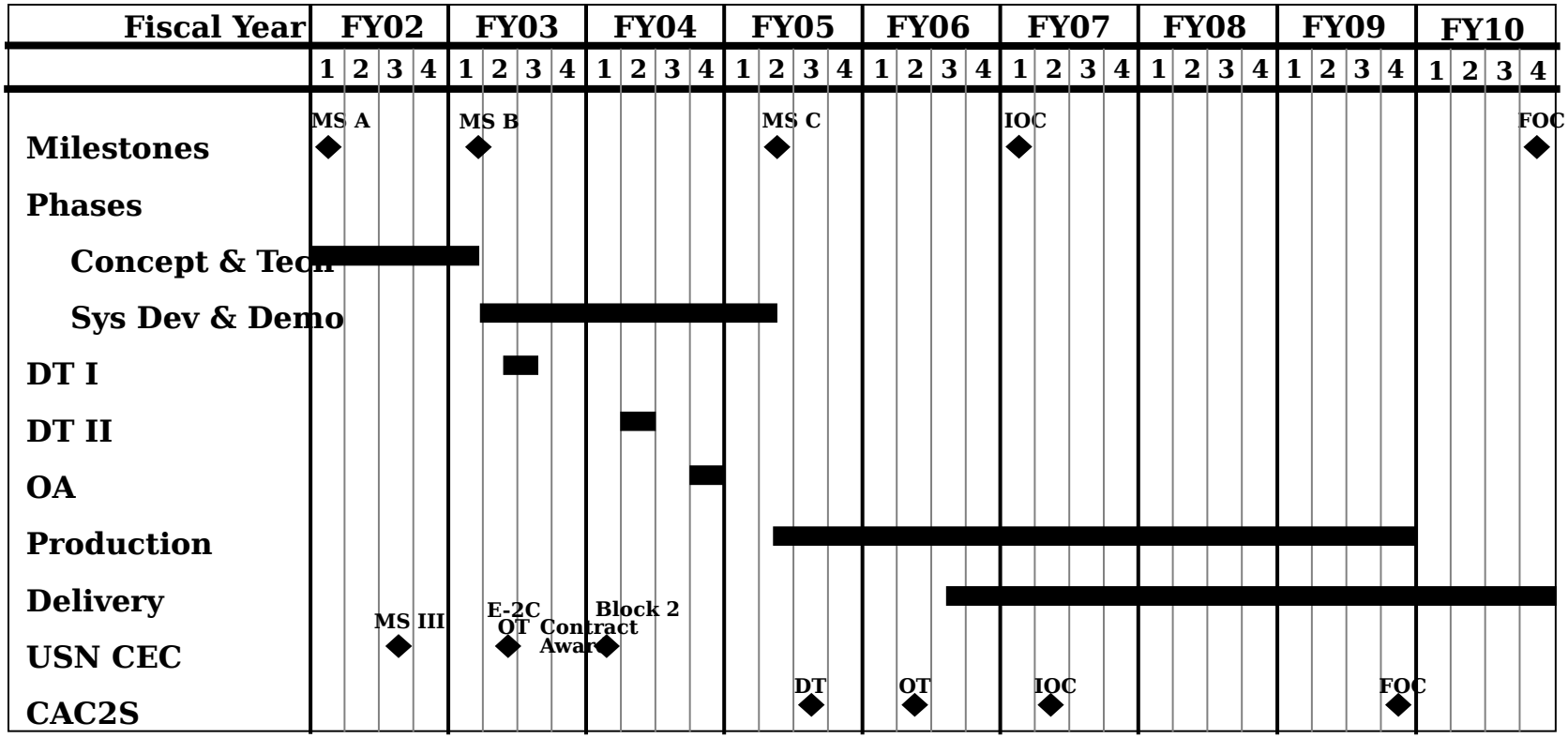
USN Supported Test Environment

- ***Provides USMC affordable testing opportunities***
  - 2 CEC Equipped facilities
  - Live ship radar systems
  - Addresses interoperability concerns
- ***USMC Support***
  - Reserve (MACS-24) systems used
  - Integration with live systems

USN/USMC West Coast Environment

- ***In development***
  - Supported by mobile nodes
  - MACS-1 radar support
  - Supports USMC DT I

Macro Program Schedule



Project Issues

- USN requires full performance antenna
  - Utilize MCA (approx 275 lbs) if employable
  - Received informal approval for less than full performance
- Significant difficulties mating CTN schedule with USN plans
  - USN long term plans historically unclear
  - USN competition plan impact (Block 2)
  - USN testing priorities (BG focused, excluding CTN)
- No requirement for joint system
  - Potentially developing a USMC/USN only system
  - USN intent to address multi-service characteristics and attributes in CEC Block 2
  - Questionable long term operational benefits if not joint
- Full CTN system (trailer w/CEC equipment) planned as a 2 year interim system (4 systems, FY ’05-’06)
  - Intent to incorporate USN Block 2 LRIP CEC systems within CAC2S (FY ’07 to AAO)

Conclusion

QUESTIONS ?